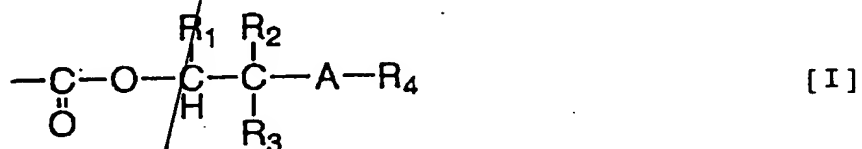


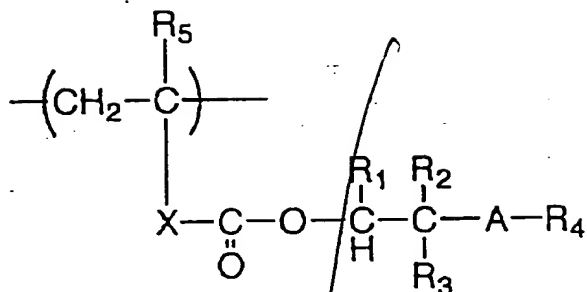
WHAT IS CLAIMED IS:

1. A positive type photoresist composition comprising a resin having an ester group represented by the following general formula [I] in its molecule and a compound generating an acid by irradiation of an active light ray or radiation:



wherein R₁ represents a hydrogen atom, an alkyl group or a cycloalkyl group; and R₂ and R₃, which may be the same or different, each represents a hydrogen atom, an alkyl group, a cycloalkyl group or -A-R₄, and R₂ and R₃ may combine together to form a ring, wherein R₄ represents a hydrogen atom, an alkyl group or a cycloalkyl group, R₄ and R₂ or R₃ may combine together to form a ring, and A represents an oxygen atom or a sulfur atom.

2. The positive type photoresist composition according to claim 1, wherein said resin is a resin containing repeating structural units represented by the following general formula [II]:

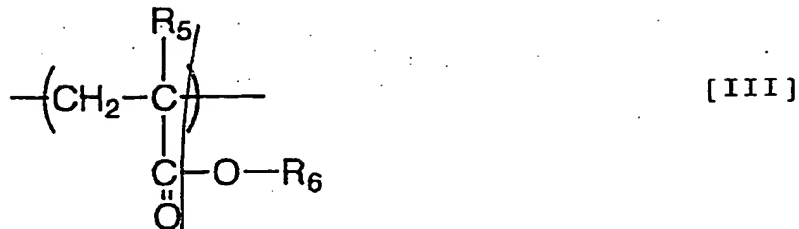


[II]

wherein R_1 to R_4 have the same meanings as given in claim 1; R_5 represents a hydrogen atom or a methyl group; and X represents one group selected from the group consisting of a single bond, an alkylene group, a substituted alkylene group, an ether group, a thioether group, a carbonyl group, an ester group, an amido group, a sulfonamido group, a urethane group and a urea group, or a combination of two or more of them.

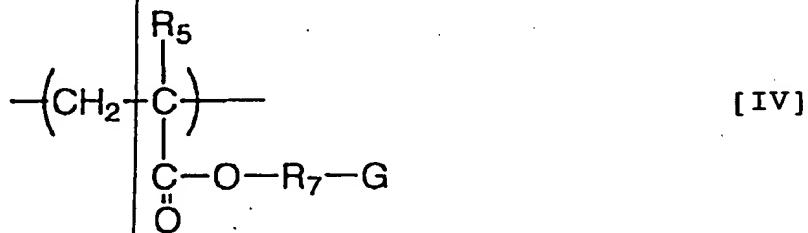
3. The positive type photoresist composition according to claim 1 or 2, wherein said resin further contains repeating structure units each having an alicyclic hydrocarbon moiety.

4. The positive type photoresist composition according to claim 3, wherein said repeating structure units each having a alicyclic hydrocarbon moiety are repeating structure units represented by the following general formula [III]:



wherein R₅ represents a hydrogen atom or a methyl group; and R₆ represents a monovalent alicyclic hydrocarbon group.

5. The positive type photoresist composition according to claim 3, wherein said repeating structure units each having a alicyclic hydrocarbon moiety are repeating structure units represented by the following general formula [IV]:

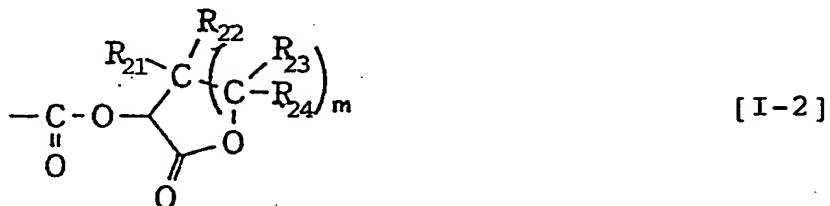


wherein R₅ represents a hydrogen atom or a methyl group; and R₇ represents a connecting group containing a divalent alicyclic hydrocarbon moiety; and G represents -COOH, -OH, -COOR₈ or -OR₈ wherein R₈ represents a tertiary alkyl group, a tetrahydropyranyl group, a tetrahydrofuranyl group, -CH₂OR₉,

or $-\text{CH}(\text{CH}_3)\text{OR}$, wherein R, represents an alkyl group.

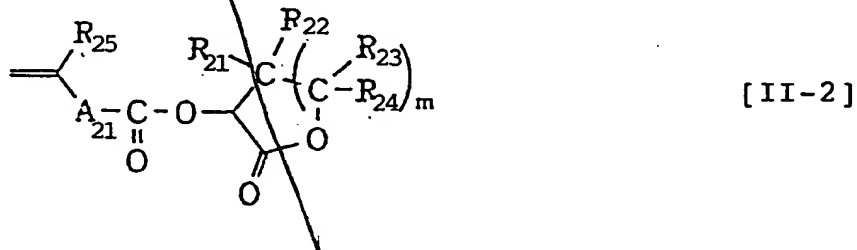
sub
A₁

6. A positive type photoresist composition comprising a resin which has an ester group represented by the following general formula [I-2] in its molecule and is decomposed by action of an acid to increase solubility in an alkali solution, and a compound generating an acid by irradiation of an active light ray or radiation:



wherein R_{21} to R_{24} , which may be the same or different, each represents a hydrogen atom or an alkyl group; and m represents 1 or 2.

7. The positive type photoresist composition according to claim 6, wherein said resin is a resin which contains repeating structure units corresponding to a monomer represented by the following general formula [II-2] and is decomposed by action of an acid to increase solubility in an alkali solution:



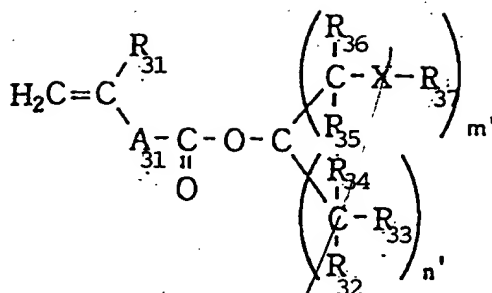
Sub
A,
omit

wherein R_{21} to R_{24} and m have the same meanings as given in claim 6; R_{25} represents a hydrogen atom or a methyl group; and A_{21} represents one group selected from the group consisting of a single bond, an alkylene group, a substituted alkylene group, an ether group, a thioether group, a carbonyl group, an ester group, an amido group, a sulfonamido group, a urethane group and a urea group, or a combination of two or more of them.

8. The positive type photoresist composition according to claim 6 or 7, wherein said resin further contains repeating structure units each having an alicyclic hydrocarbon moiety.

9. The positive type photoresist composition according to any one of claims 6 to 8, wherein said resin further contains repeating structure units each having a group which is decomposed by action of an acid to increase solubility in an alkali developing solution.

10. A positive type photoresist composition for far ultraviolet ray exposure comprising a resin which is decomposed by action of an acid to increase solubility in an alkali solution, and a compound generating an acid by irradiation of an active light ray or radiation, wherein said resin is a polymer containing a monomer represented by the following general formula [I-3] as one of repeating structure units:



[I-3]

wherein R_{31} represents a hydrogen atom or a methyl group; R_{32} to R_{34} , which may be the same or different, each represents a hydrogen atom or an alkyl group; R_{35} and R_{36} , which may be the same or different, each represents a hydrogen atom, an alkyl group or $\text{X}_{31}\text{R}_{37}$, wherein R_{37} is a hydrogen atom or an alkyl group, and X_{31} is an oxygen atom or a sulfur atom; A_{31} represents one group selected from the group consisting of a single bond, an alkylene group, a substituted alkylene group, an ether group, an ester group, a thioether group, a carbonyl group, an amido group, a sulfonamido group, a urethane group and a urea group, or a combination of two or more of them; and m' is 1, 2 or 3, n' is 0, 1 or 2, and the sum of m' and n' is 3.

11. The positive type photoresist composition according to claim 10, wherein said resin is a copolymer containing repeating units of a monomer represented by general formula [I-3] and a monomer having an alicyclic

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hydrocarbon moiety in its molecule.

12. The positive type photoresist composition according to claim 10 or 11, wherein the active light ray or the radiation for exposure has a wavelength of 170 nm to 220 nm.

13. The positive type photoresist composition according to claim 10 or 11, wherein said resin further contains repeating structure units each having a group which is decomposed by action of an acid to increase solubility in an alkali developing solution.

14. The positive type photoresist composition according to claim 10 or 11, wherein said composition is composed so as to give a transmission optical density of 1.0 or less per micron of coated layer in thickness to an active light ray having a wavelength of 193 nm.

15. A positive type photoresist composition for far ultraviolet ray exposure comprising a resin which is decomposed by action of an acid to increase solubility in an alkali solution, and a compound generating an acid by irradiation of an active light ray or radiation, wherein said resin is a polymer containing a monomer represented by the following general formula [I-4] as one of repeating structure units:

$$\text{H}_2\text{C}=\text{C} \begin{array}{l} \text{R}_{41} \\ \text{A}-\text{C}-\text{O}-\text{C} \end{array} \begin{array}{l} \text{R}_{46} \\ \text{C}-\text{X}_{41} \\ \text{R}_{45} \\ \text{R}_{44} \\ \text{C}-\text{R}_{43} \\ \text{R}_{42} \end{array} \begin{array}{l} \text{m} \\ \text{n} \end{array}$$

wherein R_{41} represents a hydrogen atom or a methyl group; R_{42} to R_{44} , which may be the same or different, each represents a hydrogen atom or an alkyl group; R_{45} and R_{46} , which may be the same or different, each represents a hydrogen atom, an alkyl group or a halogen atom; X_{41} represents a halogen atom; A_{41} represents one group selected from the group consisting of a single bond, an alkylene group, a substituted alkylene group, an ether group, an ester group, a thioether group, a carbonyl group, an amido group, a sulfonamido group, a urethane group and a urea group, or a combination of two or more of them; and m'' is 1, 2 or 3, n'' is 0, 1 or 2, and the sum of m'' and n'' is 3.

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17. The positive type photoresist composition according to claim 15 or 16, wherein the active light ray or the radiation for exposure has a wavelength of 170 nm to 220 nm.

18. The positive type photoresist composition according to claim 15 or 16, wherein said resin further contains repeating structure units each having a group which is decomposed by action of an acid to increase solubility in an alkali developing solution.

19. The positive type photoresist composition according to claim 15 or 16, wherein said composition is composed so as to give a transmission optical density of 1.0 or less per micron of coated layer in thickness to an active light ray having a wavelength of 193 nm.

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